

# 1085C Excavator

GySgt  
**BRUBAKER**



# 1085C

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- ✓ **Terminal Learning Objectives**
- ✓ **Enabling Learning Objectives**
- ✓ **Written Exam**
- ✓ **Performance Exam**

# 1085C Characteristics

- ✓ Diesel powered
- ✓ Full revolving
- ✓ Multipurpose
- ✓ Medium weight
- ✓ Hydraulic excavator





# 1085C Lower Structure

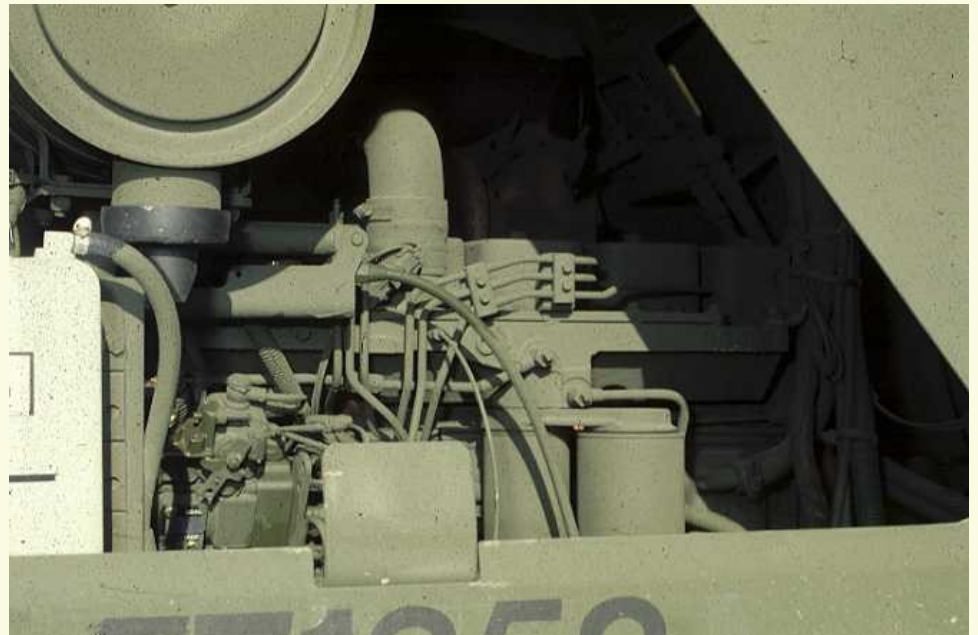
- Contains the following:
- Power train
- Axles
- Outriggers
- Fuel tank
  - 70 Gallons



# 1085C Engine

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- **6 Cylinder**
- **J.I. Case 6T590**
- **133 HP at 2200 RPM**



# 1085C Transmission

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- **3 speed forward and reverse**
- **High/low transfer**
- **Shift when machine is stopped and transmission in neutral**
- **Low range, move switch lock forward and push down on rear of switch.**

# 1085C Transmission

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# 1085C Transmission

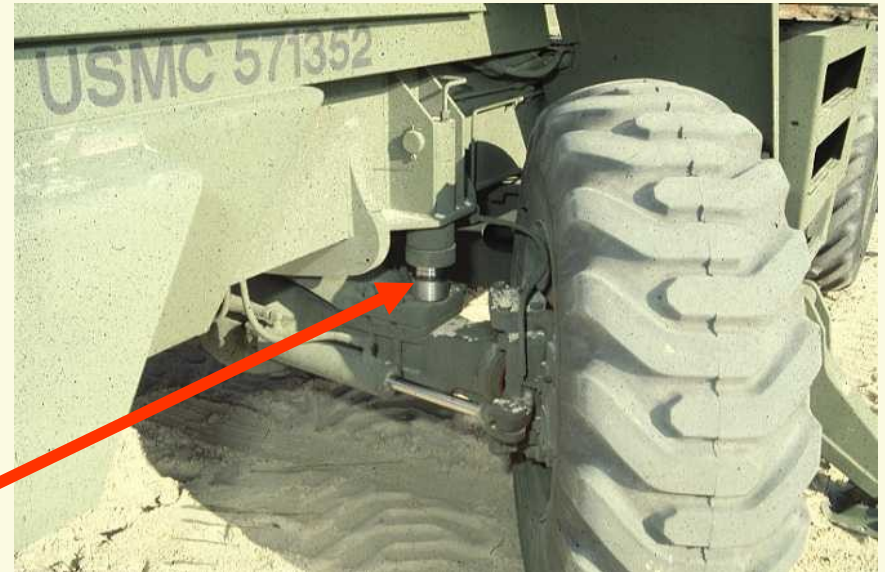
**High/Low  
selector  
switch**





# 1085C Axles

- **Front and rear planetary drive axles**
- **Constant 4 wheel drive**
- **Front wheel steering**
- **Front axle oscillates and equipped with hydraulic lockouts**
- **Rear axle is rigid mounted**



# 1085C Axles

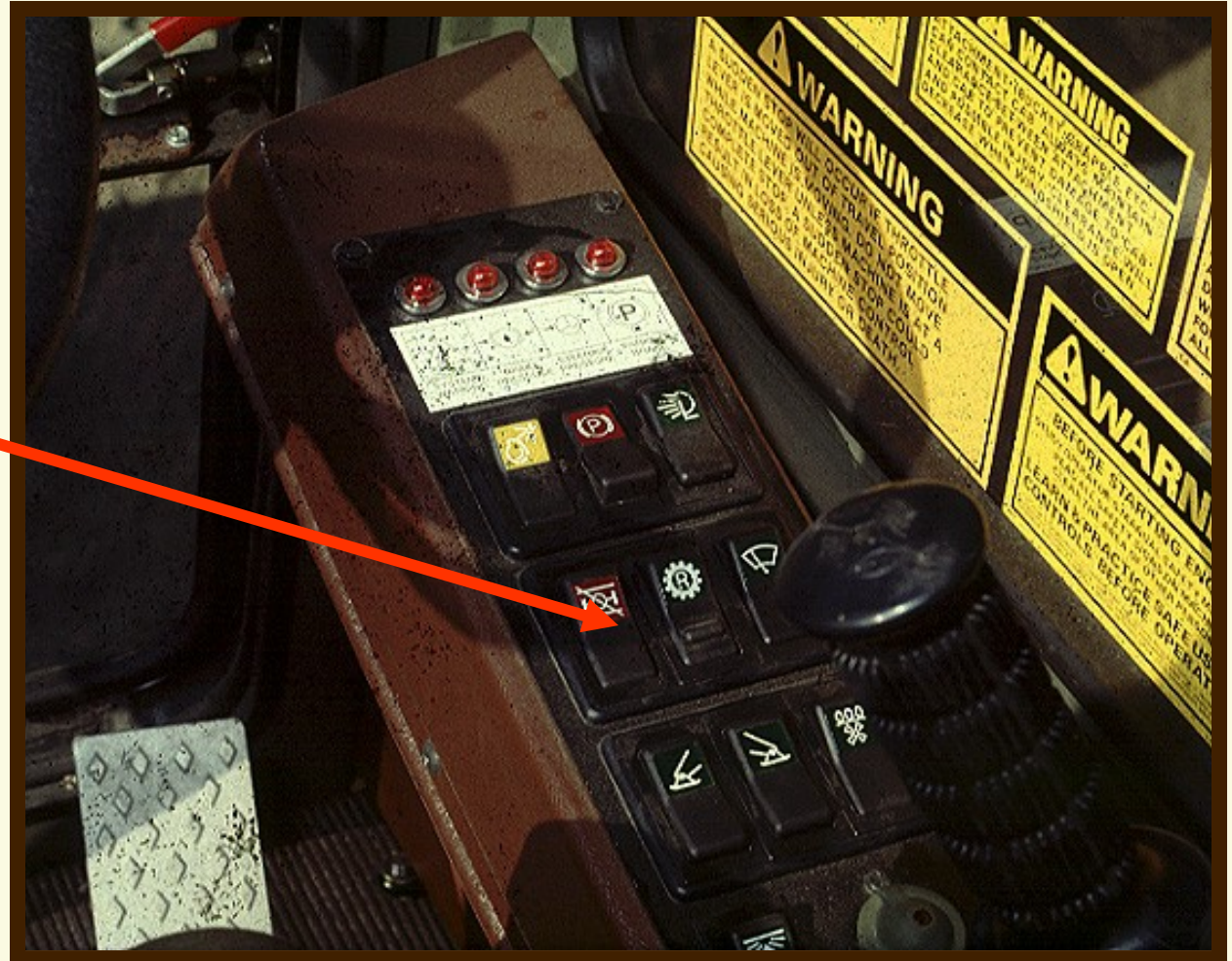
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## ✓ **Front Axle Oscillation Lock Switch**

- **Engine running**
- **Push front of switch down to engage**
- **Holds front axle in position while digging**
- **Push rear of switch to release locks**
- **Must disengage while driving**
- **Allows front axle to oscillate**

# 1085C Axles

**Front  
Axle  
Oscillati  
on Lock  
Switch**





# 1085C Outriggers

- **Four hydraulically operated outriggers**



# 1085C Upper Structure

- **Revolves 360 degrees on bearing and ring gear**
- **Consist of:**
- **Operator's Cab**
- **Counter Weight**
- **Boom Assembly**



# 1085C Boom Assembly

- With the wrist-o-twist/GP bucket extend 30' 8"
- Tool boom is hydraulically operated and extends 5' 1"
- Maintain 10' clearance from power lines





# 1085C Capabilities

- **Maximum speed 29.1 mph.**
- **Maximum fording depth 60 inches**
- **Equipped with 6 attachments**



# 1085C Attachments

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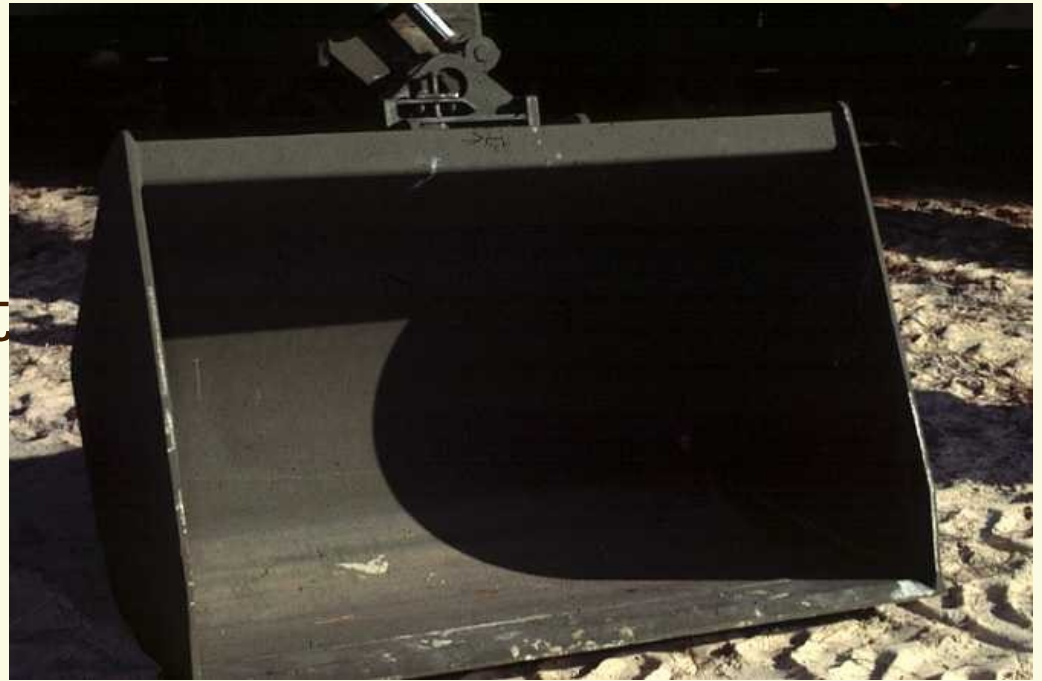
- **5/8 cubic yard  
general purpose  
bucket**



# 1085C Attachments

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- **1 1/2 cubic yard shovel front bucket**

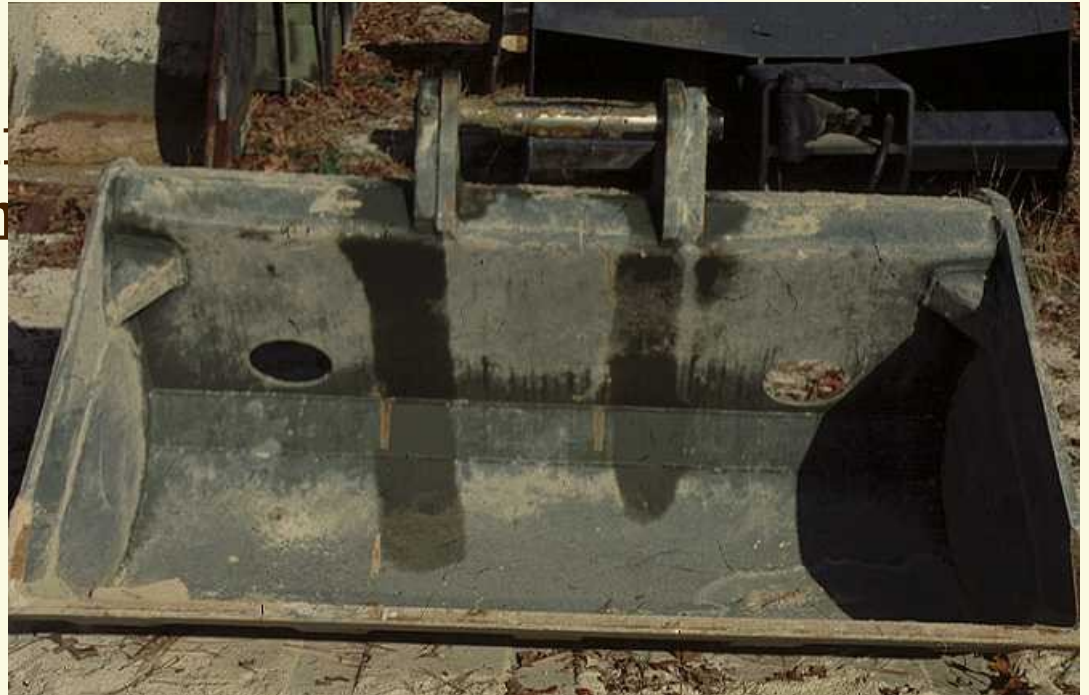




# 1085C Attachments

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- **5/8 cubic yard  
ditch forming  
bucket**



# 1085C Attachments

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- **Model 220 compactor**



# 1085C Attachments

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- **Model 2750 auger**



# 1085C Attachments

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- **Hydraulic hammer**





# 1085C Wrist-O-Twist

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- **Enables operator to angle all attachments 45 degrees left or right**



# 1085C Digging Depth

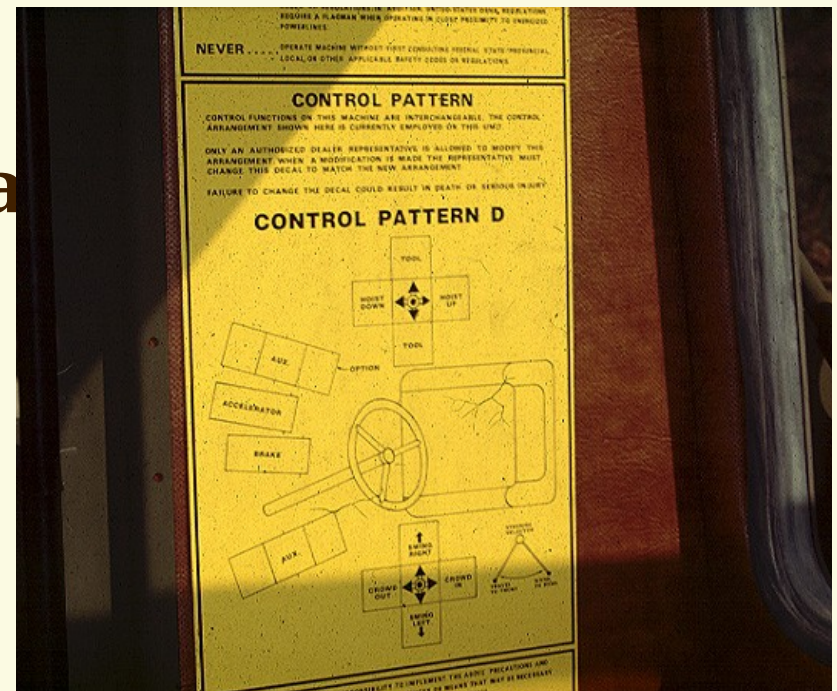
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- **Maximum depth of 18' 11" with**
- **Wrist-o-twist**
- **General purpose bucket**



# 1085C Controls/Foot Pedals

- Wrist-O-Twist
- Brake
- Accelerator
- Tool Boom Extension/Hydraulic Tool
- Boom
- Swing
- Steering Lever





# 1085C Controls/Foot Pedals

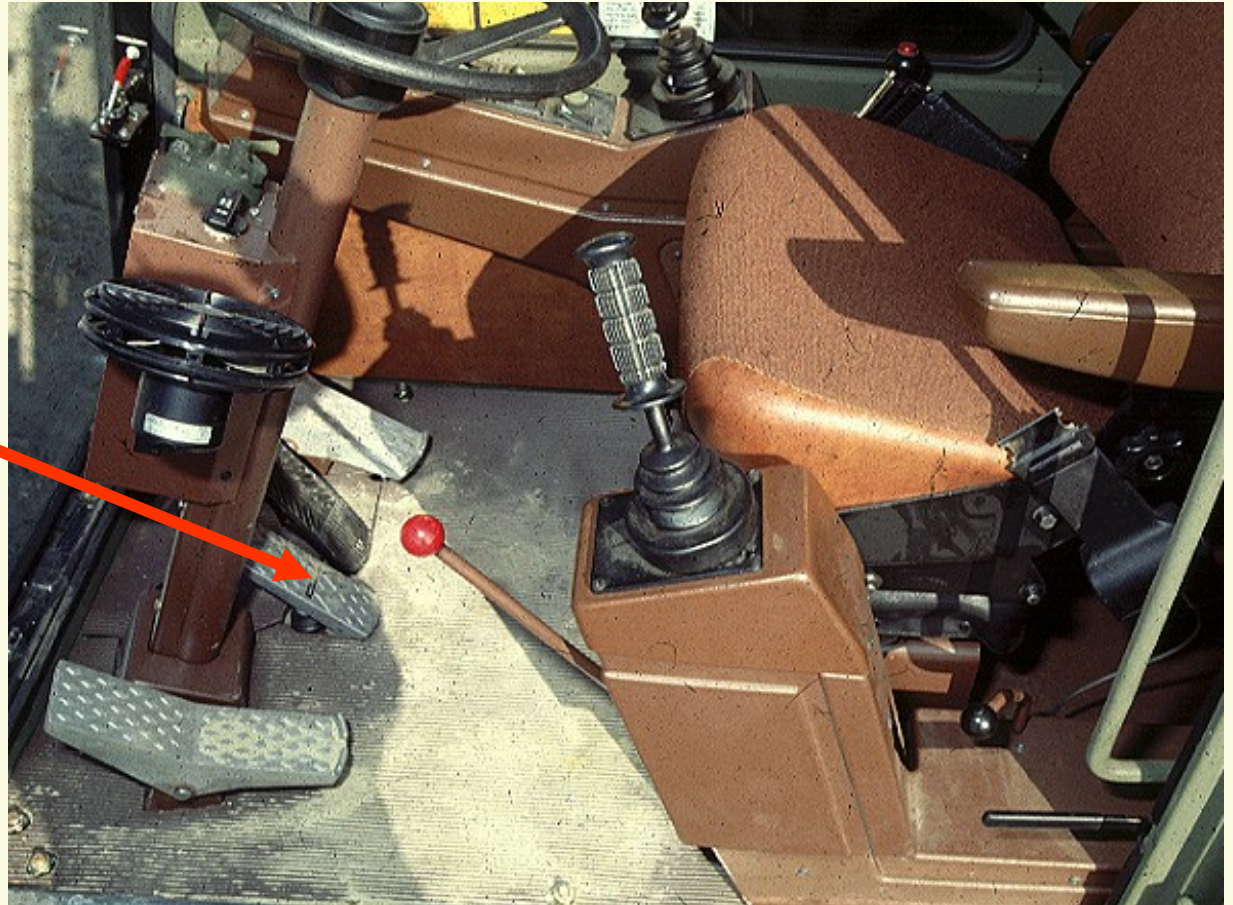
**Wrist-o-  
twist pedal**





# 1085C Controls/Foot Pedals

**Brake pedal**



# 1085C Controls/Foot Pedals

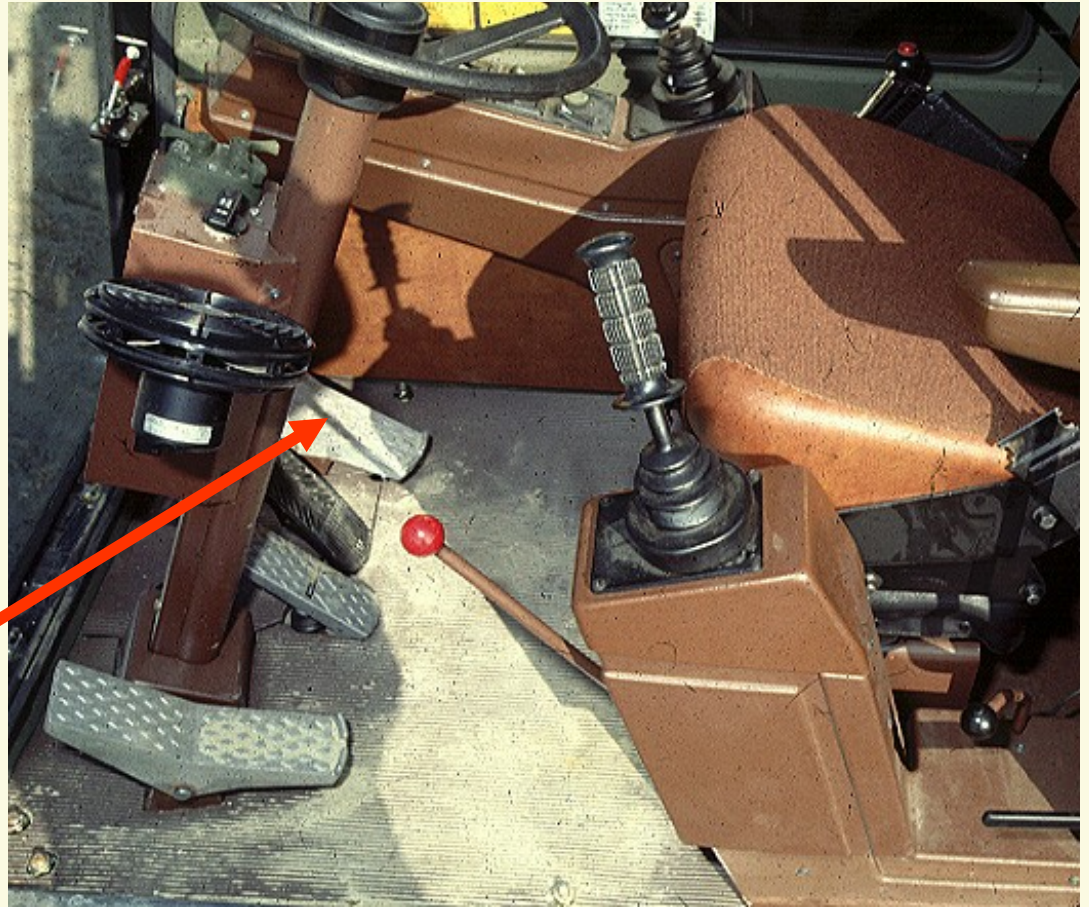
Accelerator pedal



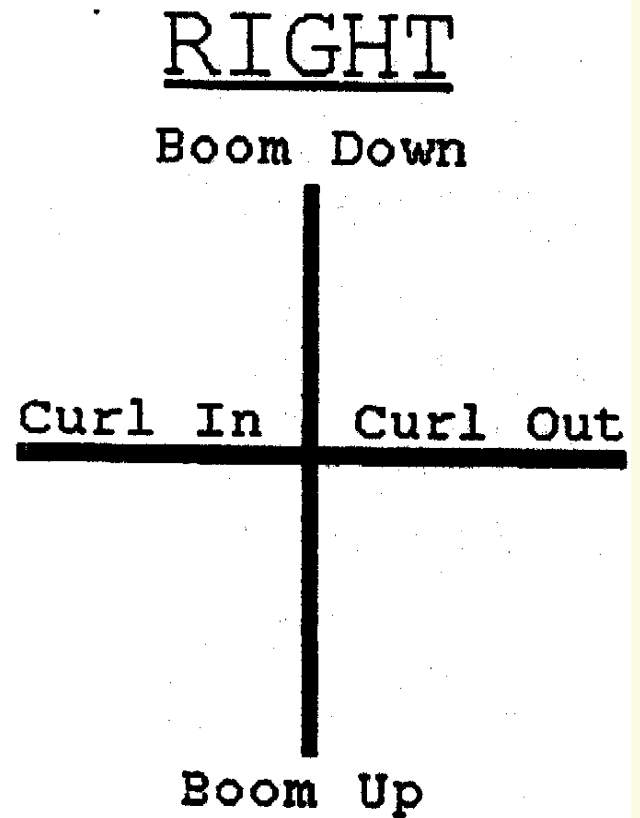
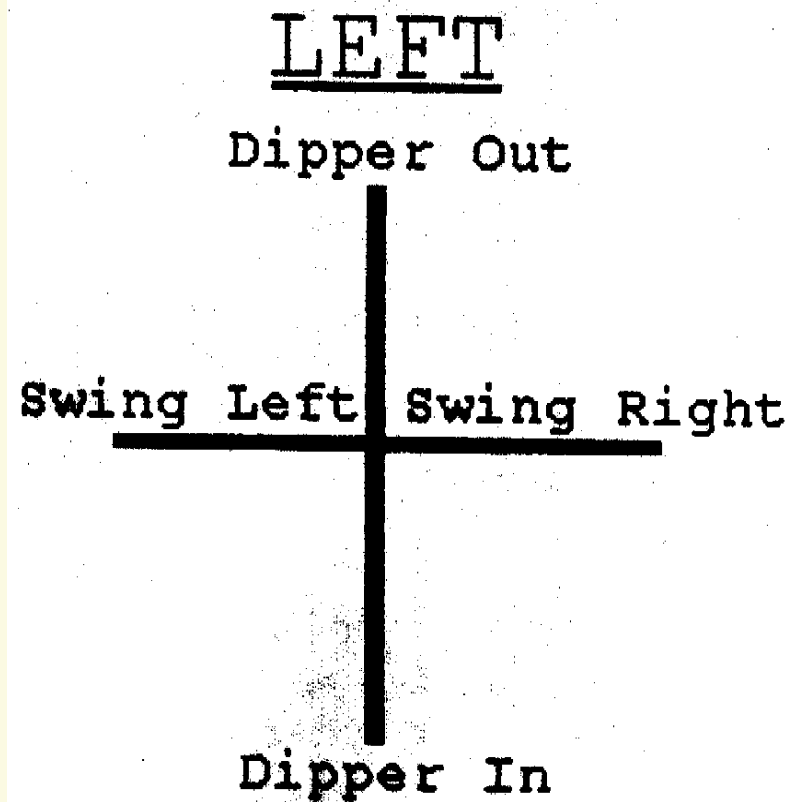


# 1085C Controls/Foot Pedals

**Tool  
boom  
extension/hydra  
ulic tool  
pedal**



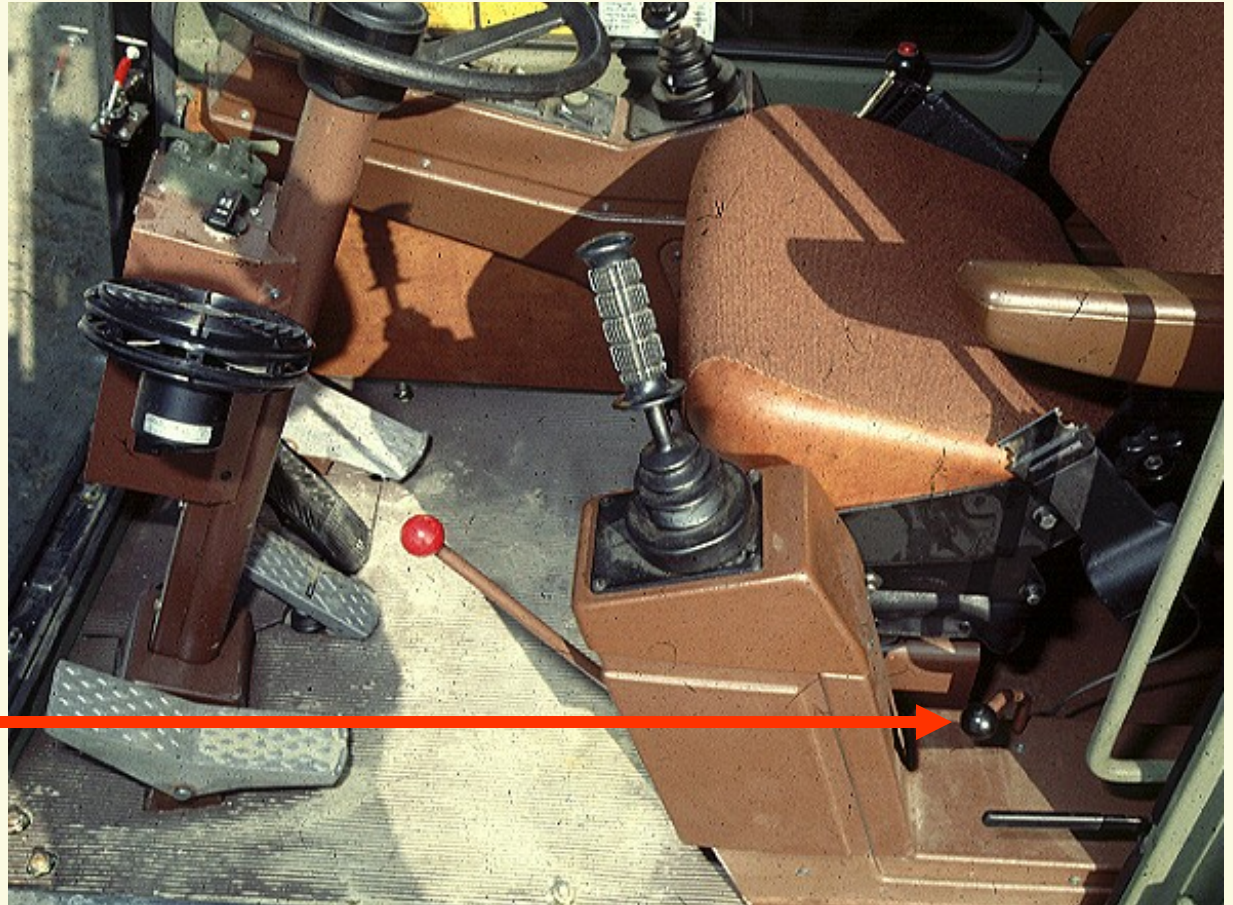
# 1085C Controls/Foot Pedals





# 1085C Controls/Foot Pedals

**Steering lever**



# **1085C Controls/Foot Pedals**

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- ✓ **Steering selector lever**
  - **Lever toward front of cab (Black knob towards engine) in travel position**
  - **Lever toward rear of cab in working (Digging) position**

# 1085C Controls/Foot Pedals

- **Swing Brake**
- **Hand Throttle**
- **Transmission Lever**

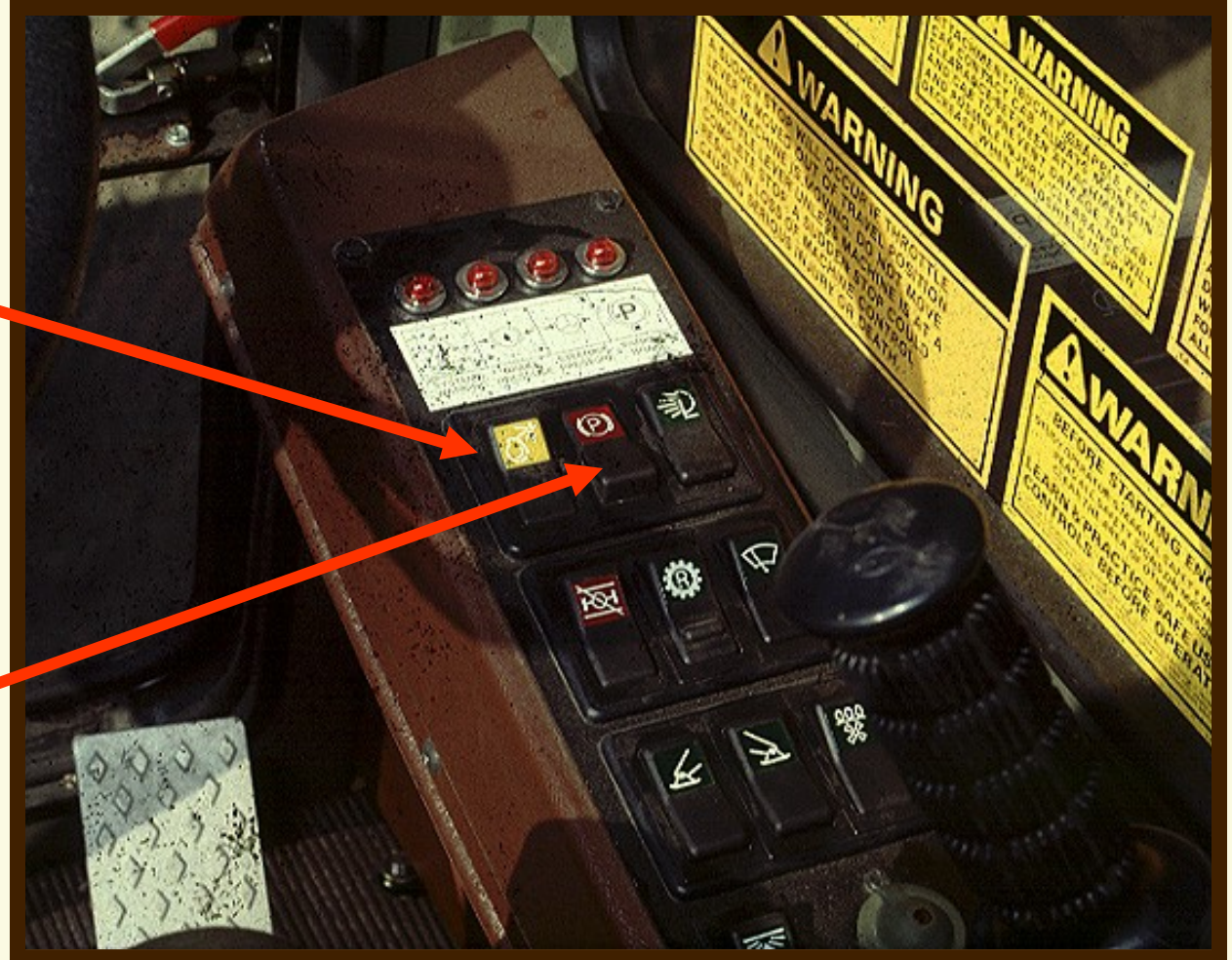




# 1085C Controls/Foot Pedals

**Cold  
start  
switch**

**Park  
brake  
switch  
h**

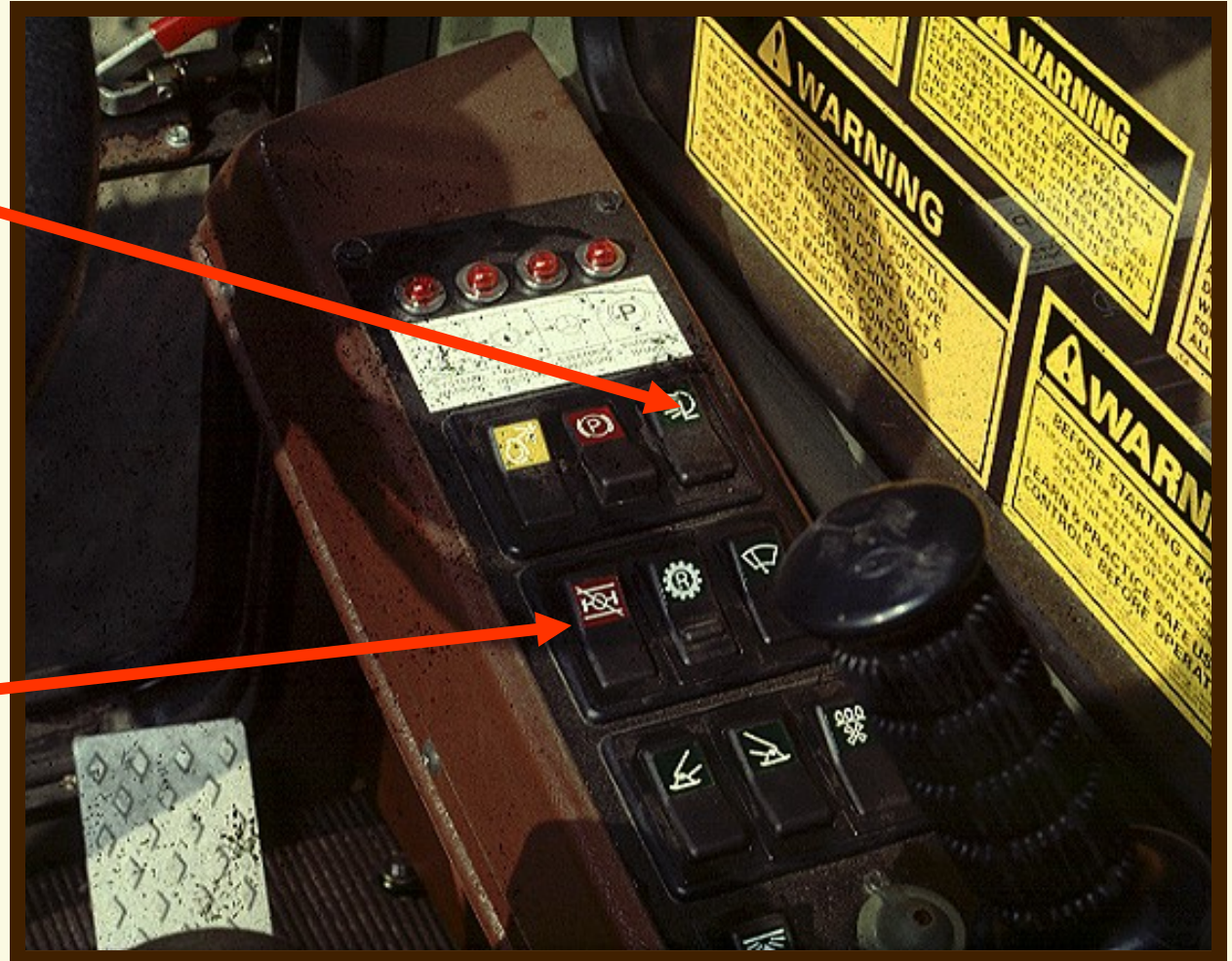




# 1085C Controls/Foot Pedals

**Boom  
working  
light  
switch**

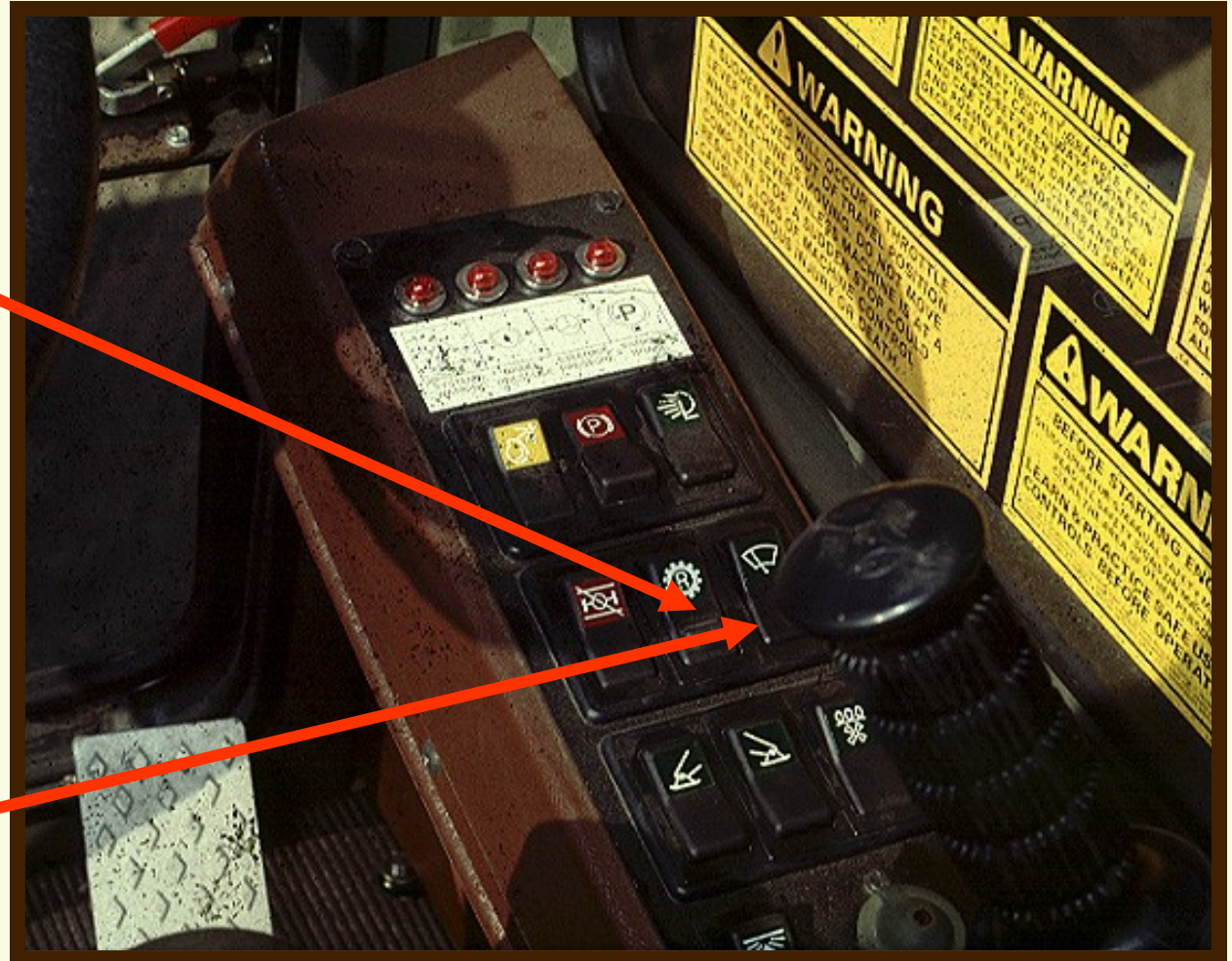
**Axle  
lock  
switch**



# 1085C Controls/Foot Pedals

Trany  
range  
select  
or  
switch

Windshie  
ld wipers  
switch

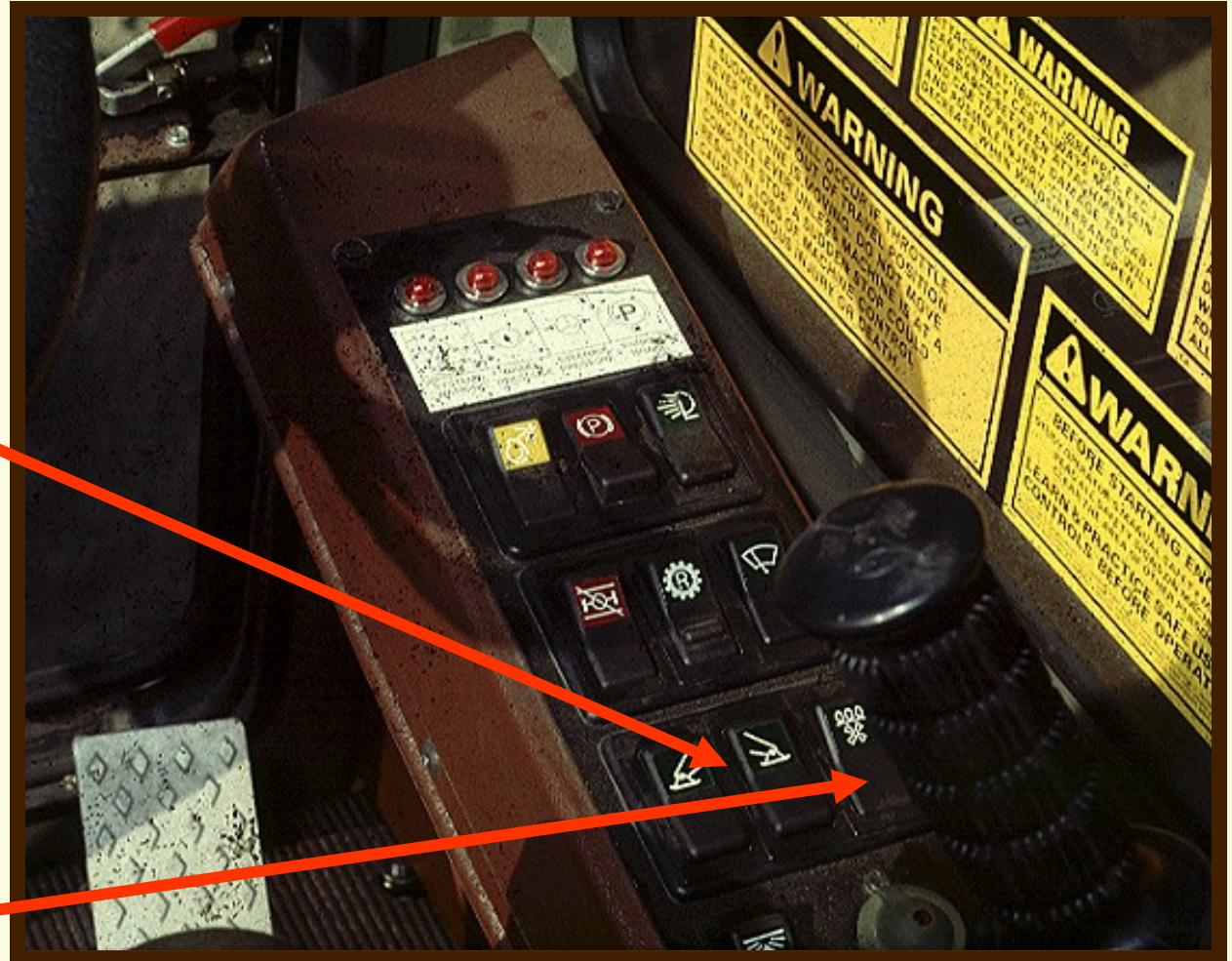




# 1085C Controls/Foot Pedals

Outrigger  
switches

Heater  
switch





# 1085C Controls/Foot Pedals

Tool  
boom  
switch



# **1085C Controls/Foot Pedals**

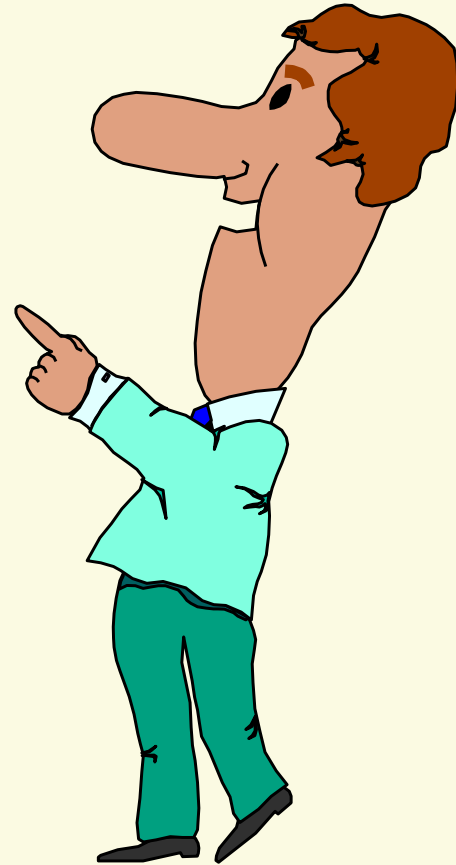
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## **✓ Tool Boom Switch**

- Push front of switch to activate hydraulic attachments**
- Push rear of switch when bucket attachments are mounted on 1085C**

# 1085C Water Temperature

- Temperature range is 180 - 203 degrees Fahrenheit





# 1085C Hand Throttle

- **When in working position:**
- **Transmission automatically placed in neutral**
- **Parking brake applied**
- **Engine goes to high RPM**
- **Working position is fully forward**



# 1085C Electrical System

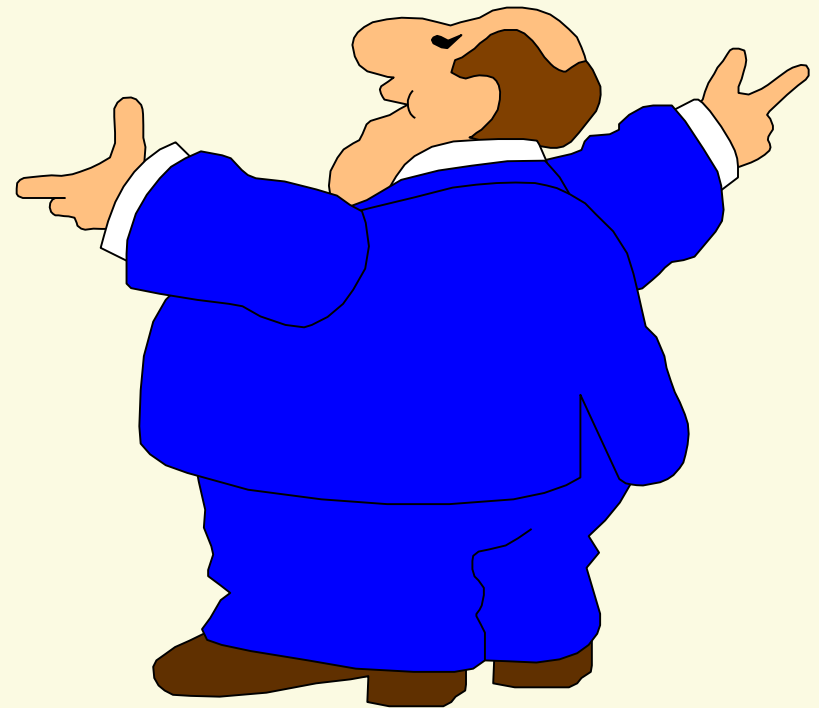
- **Has a 24 volt system using two 12 volt batteries.**



# 1085C Warning Buzzer

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- **Back up alarm will sound anytime machine is driven and cab is not in travel position.**





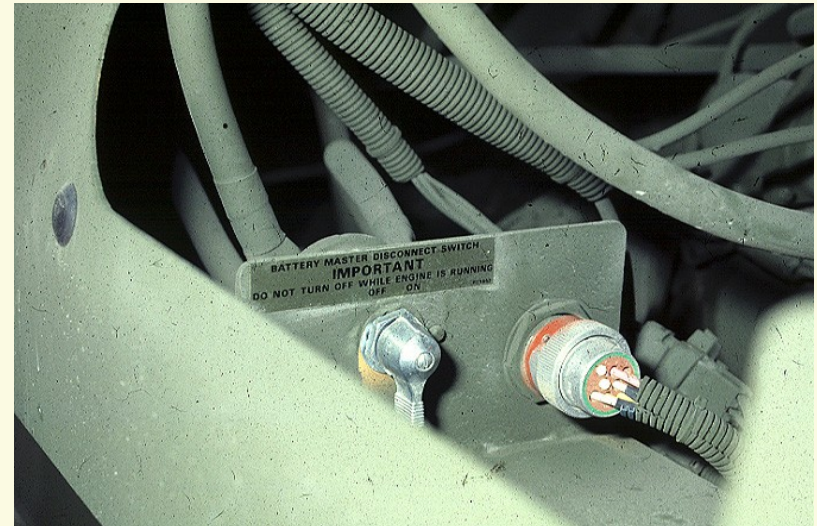
# 1085C Left Control Console

- Engages and disengages the hydraulics
- When entering or exiting the cab, pivot the **red** knob back to disengage the hydraulic system



# 1085C Master Switch

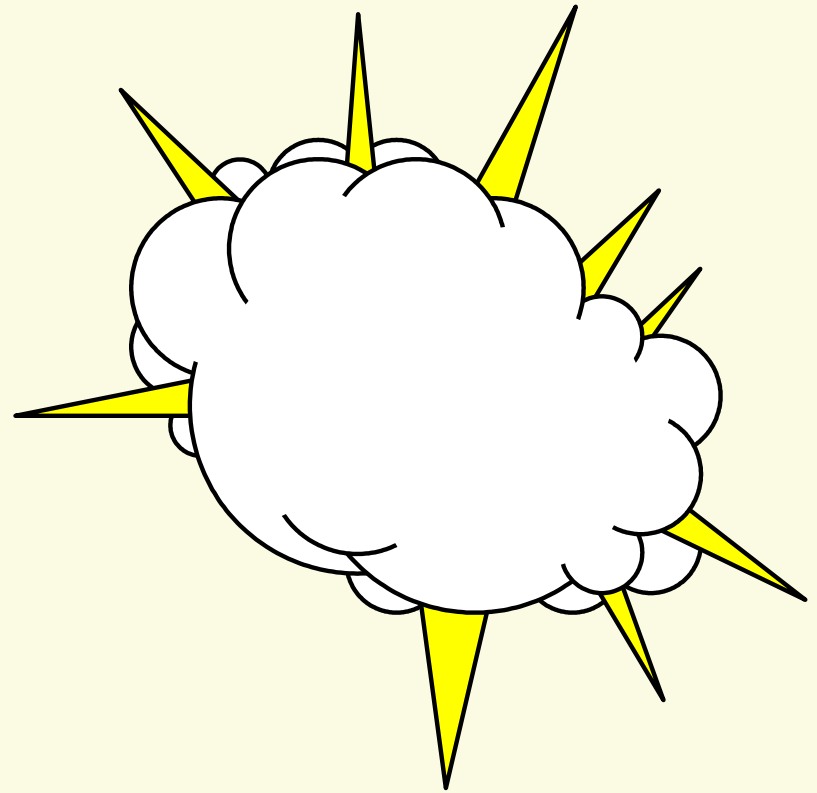
- Located on right side engine compartment
- Do not try to stop the engine with this switch
- **DAMAGE TO THE ELECTRICAL SYSTEM MAY OCCUR**



# 1085C Cold Start

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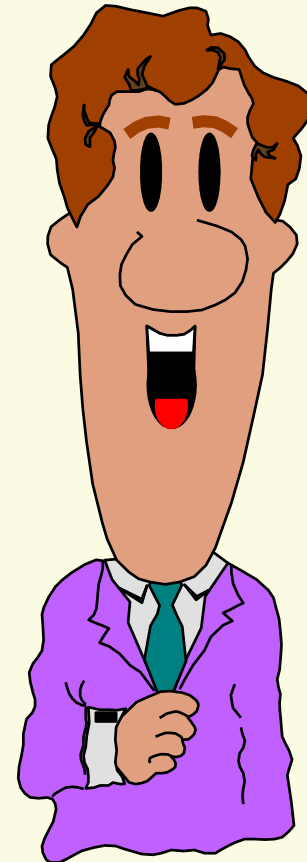
- **Ether start**
- **32 degrees or colder.**
- **Injects a measured amount of ether into the engine.**





# 1085C Attachments and Employment

- **Ditch Forming Bucket**
- **Employed with the wrist-o-twist for digging:**
- **V-type and roll ditches**
- **Roadways, airfields, and camp construction for fast drainage**



# 1085C Roll Ditches

- **Must be parallel with roadway**
- **Lock axle before swinging**
- **Position upper structure off side**



# 1085C Roll Ditches

- **Place bucket straight in dump position above ground level**
- **Depth of ditch depends on how high bucket is above ground level**





# 1085C Roll Ditch

- **Once positioned, curl bucket fully**
- **Curl bucket in to compact the side of the ditch**
- **Dump along the ditch line**



# 1085C General Purpose Bucket

- **Commonly referred to as a backhoe bucket**
- **Normally associated with two types of excavations:**
  - **Trenching**
  - **Basements**



# 1085C General Purpose Bucket

- Machine centered on trench
- Every pass should produce a full bucket
- Machine moved away from end of trench
- Spoil disposed in two ways:
  - Haul units
  - Stock piled along side of trench





# 1085C General Purpose Bucket

- Trenches used for laying cable or pipe
- Level floors and straight vertical side walls can be dug



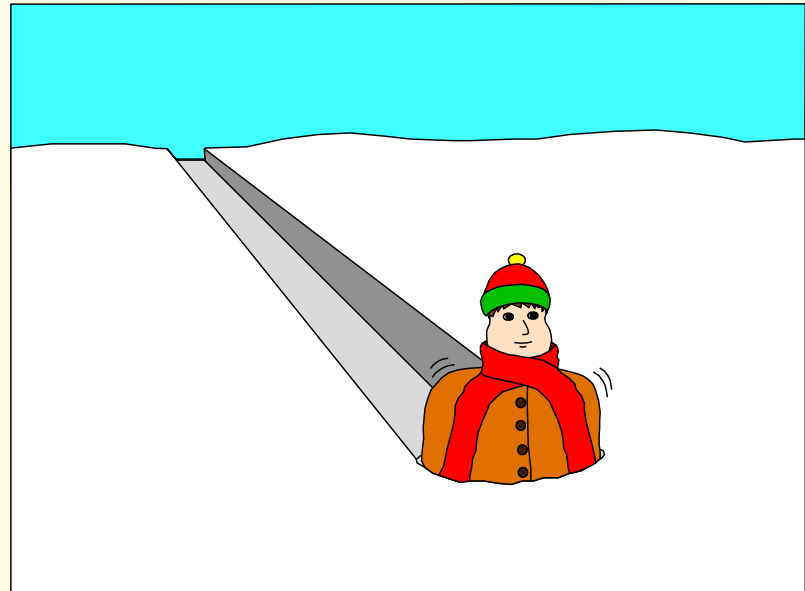
# 1085C General Purpose Bucket

- When digging, be careful not to undercut the machine
- Watch out for clearance when swinging



# 1085C General Purpose Bucket

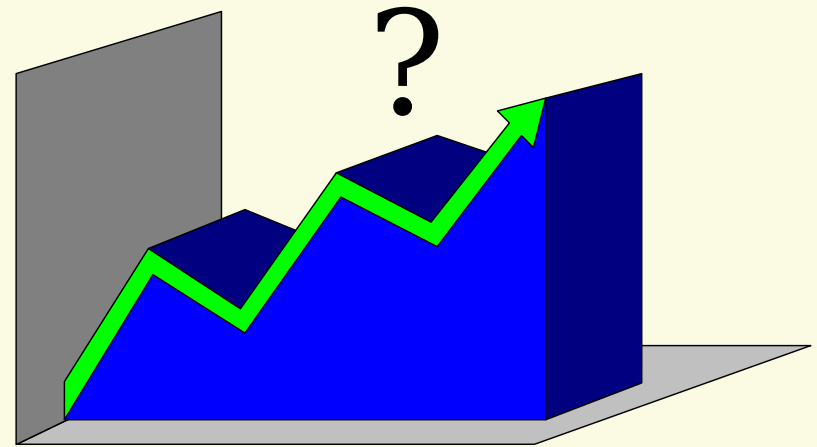
- **Several factors effect output capacity**
- **Width of excavation**
- **Depth**





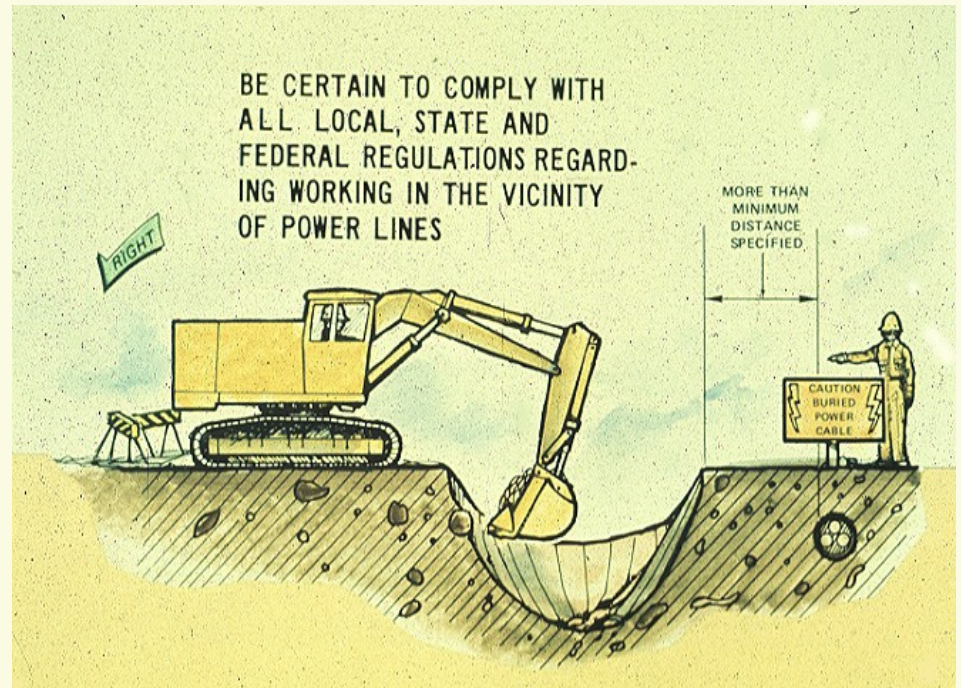
# 1085C General Purpose Bucket

- **Type of material to be handled**
- **Disposal of the material**
- **Greatest production when digging near machine**



# 1085C General Purpose Bucket

- **Watch out for buried utility lines**



# 1085C General Purpose Bucket

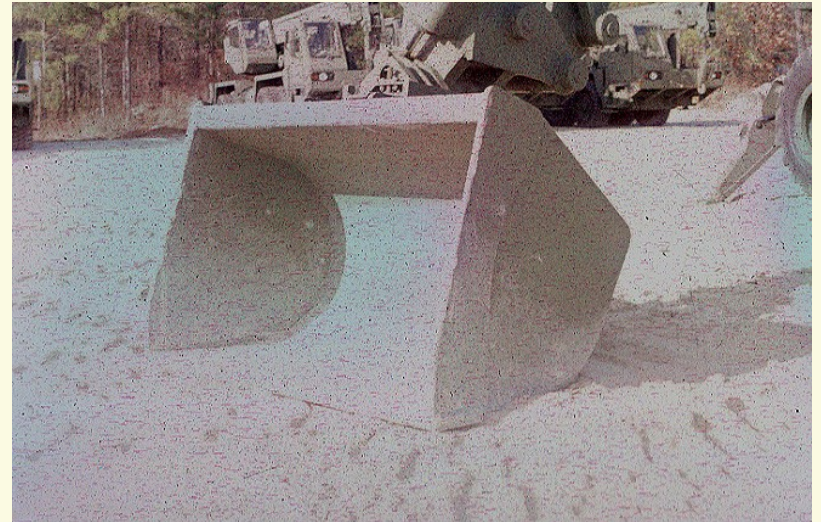
- **When traveling unlock axles.**
- **When swinging lock axles**
- **Operator must use outriggers**





# 1085C Shovel Front Bucket

- Use outriggers when using shovel front bucket
- Will dig in three zones:
- At ground level
- Above ground level
- Below ground level



# 1085C Shovel Front Bucket

- Height of embankment should not exceed the height of the boom tip
- Maximum height of working equipment is 31' fully extended



# 1085C Shovel Front Bucket

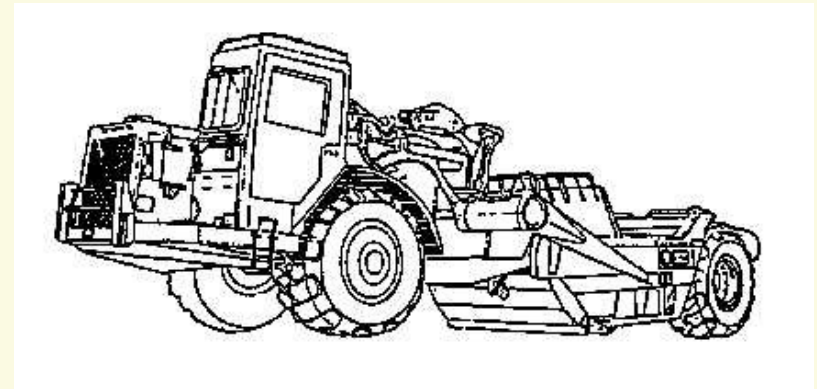
- To operate effectively the shovel must dig against the “digging face” of the embankment
- Most effective off the rear using the “frontal approach”
- Frontal approach can exert more digging force





# 1085C Shovel Front Bucket

- Another method is the parallel approach
- Used where the working area is sufficient for twin spotting of haul units



# 1085C Auger

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- **Telephone poles or one man fighting holes**
- **Attachment cannot be fully curled or damage to the auger will occur**
- **Maintain minimal downward pressure when operating**



# 1085C Auger

- The operator must insert the travel pin when parking the 1085C with the auger attached
- Before beginning to dig, experiment with auger speed to determine suitable auger RPM

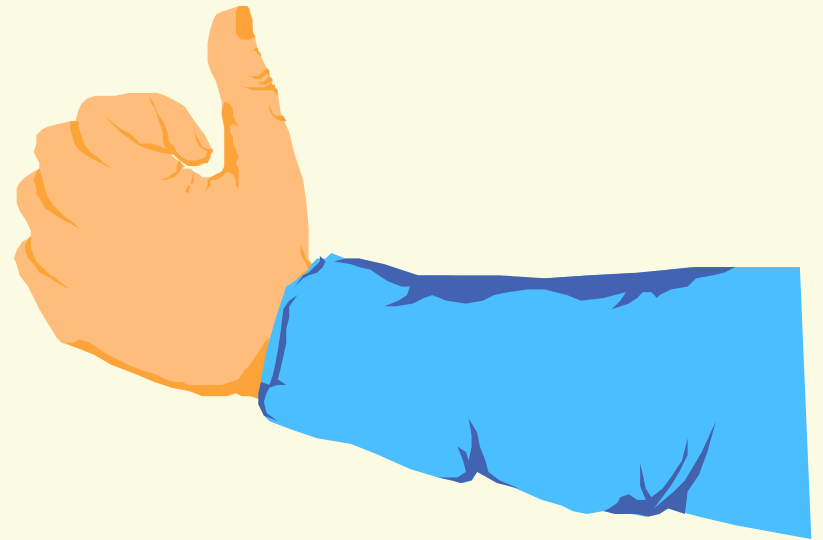




# 1085C Auger

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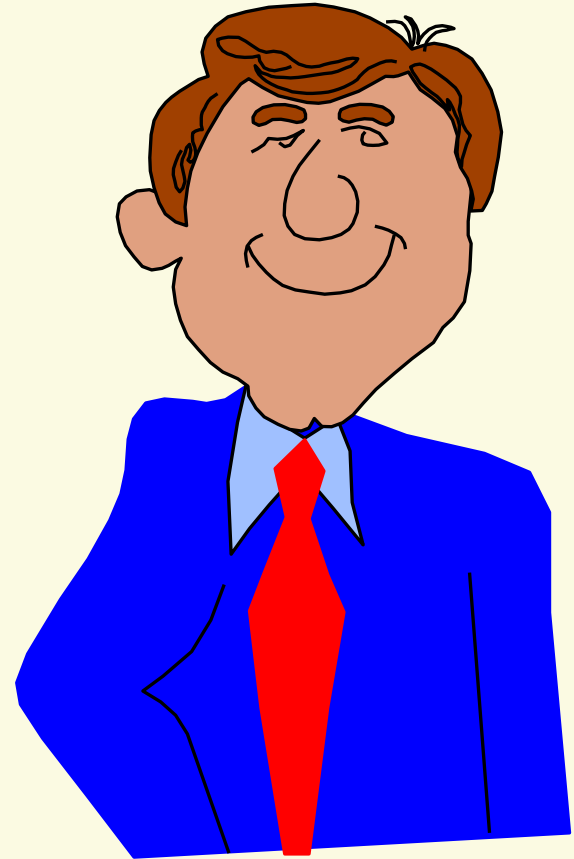
- **Light and sandy soils a high RPM**
- **Hard, Rocky or frozen soils, slower RPM**
- **When the auger has penetrated the ground about 24", raise the auger to clean the dirt out.**



# 1085C Auger

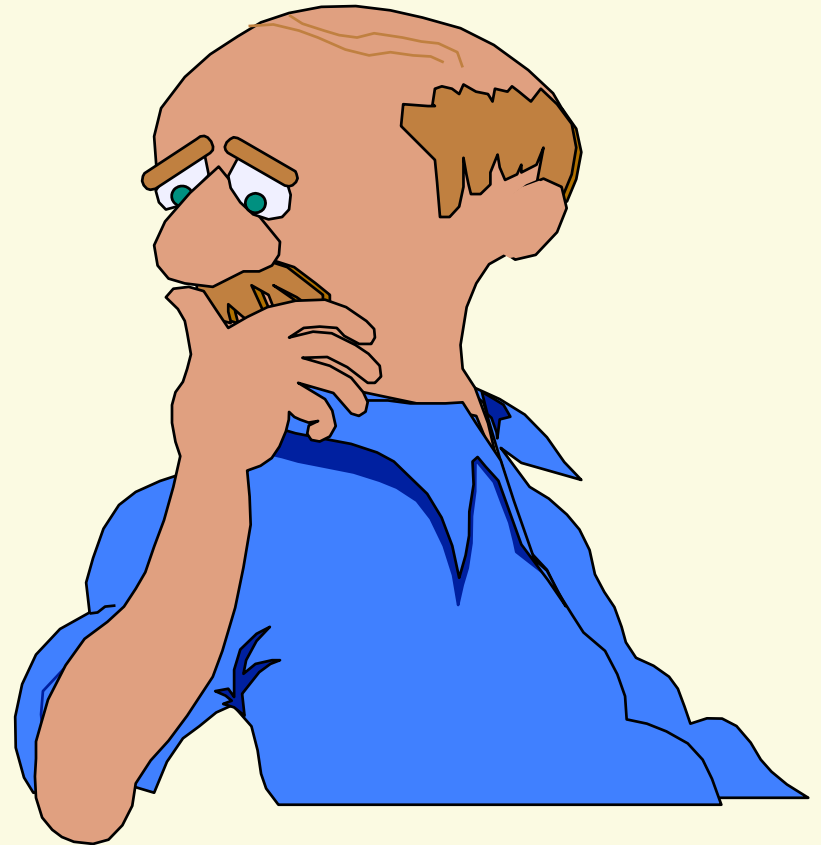
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- **Once depth is reached, allow auger to turn a few seconds to clean the hole.**
- **Remove dirt from auger, raise out of hole and spin to allow material to fall off.**



# 1085C Auger

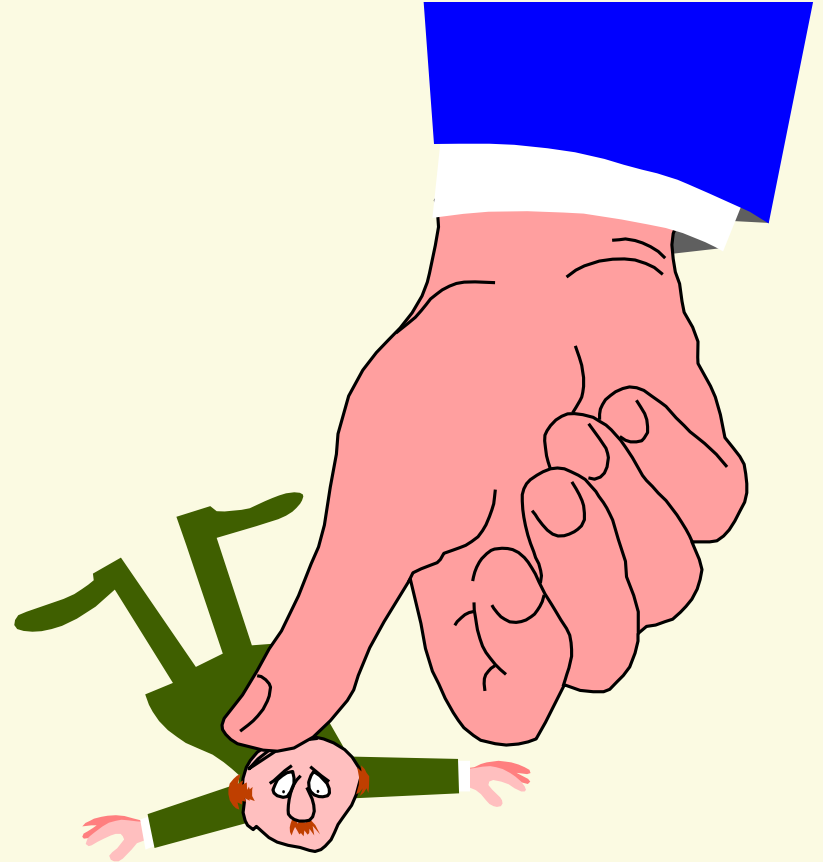
- Do not reverse the auger rotation to remove auger from hole
- If auger becomes stuck, and stalls, reverse rotation to free auger and start digging again





# 1085C Auger

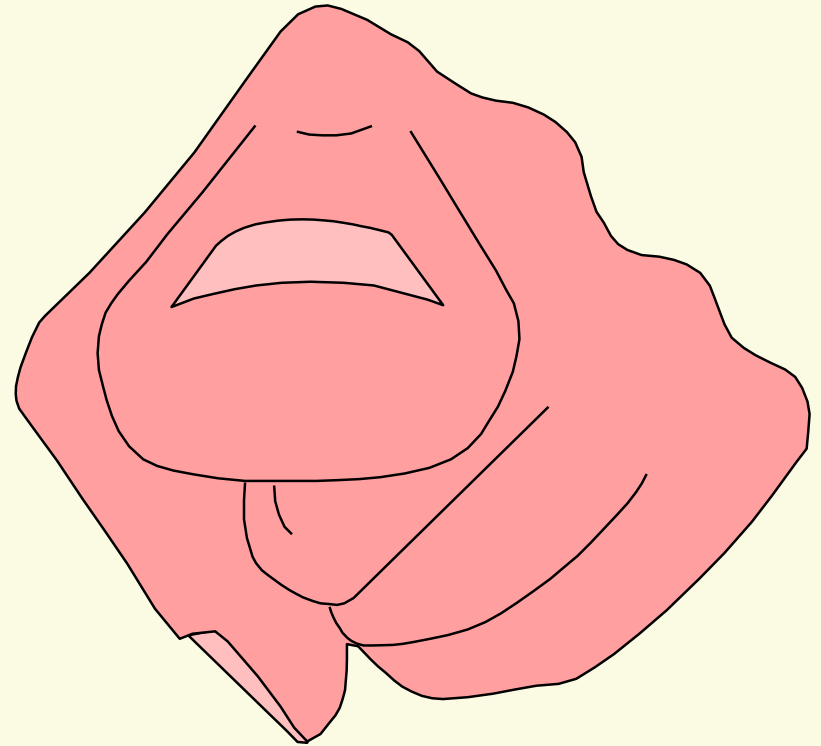
- If auger becomes lodged under rocks, roots, do not attempt to raise auger out of ground
- Reverse auger rotation



# 1085C Auger

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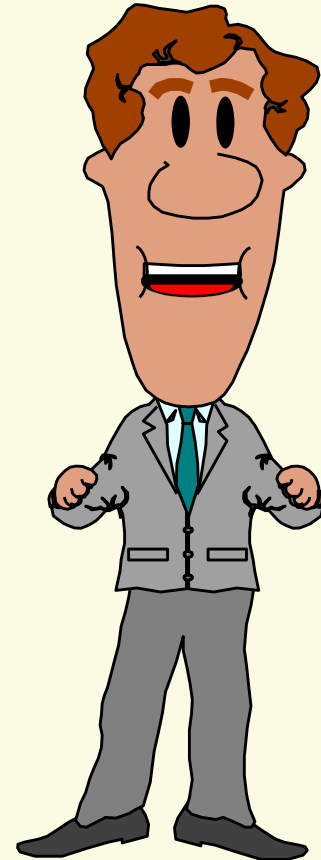
- **Avoid excessive side loading, which can cause auger damage.**
- **Keep auger 8' to 10' from the machine when digging.**
- **Do not apply extreme downward pressure.**



# 1085C Auger

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- **Traveling short distances at a job site, keep the auger off the rear and close to machine**
- **Use outriggers when digging with auger**





# 1085C Compactor

- **Compacts material at different angles.**
- **Started by actuating control pedal to direct oil to the compactor.**
- **Down force is provided by the boom/dipper down force.**



# 1085C Compactor

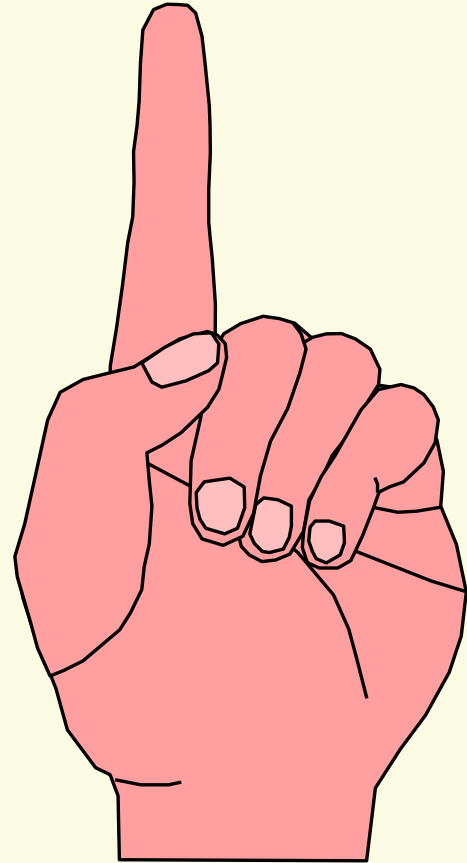
- **Most efficient operation**
- **Sufficient down force will be applied to the compactor to stretch the rubber mounts until the top mount frame almost contacts the lower base plate.**



# 1085C Compactor

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- If the top frame contacts the lower plate in operation, the vibration will be transmitted to the dipper and boom.



# 1085C Compactor

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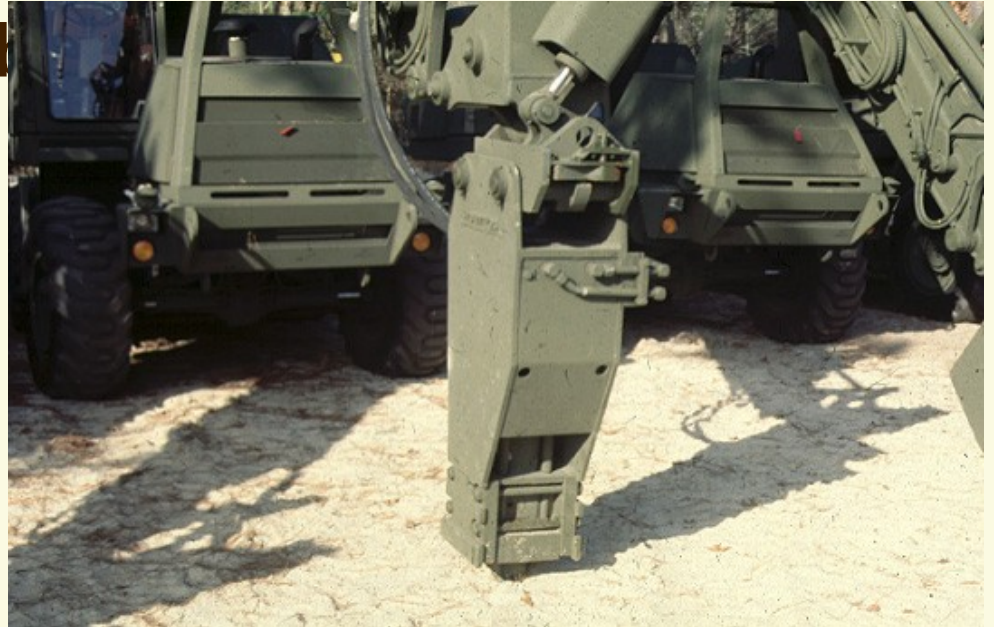
- **When traveling, keep compactor off the rear and close to the machine.**
- **Always use outriggers.**





# 1085C Hammer

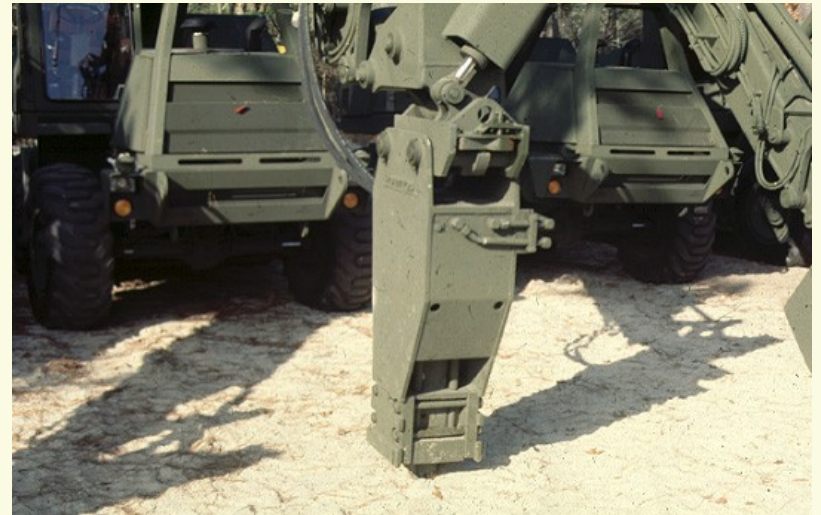
- Used to break up material such as rock and concrete.
- Five types of 1085C Hammer
  - Chisel
  - Mollpoint
  - Spade
  - Line cutter
  - Tamper



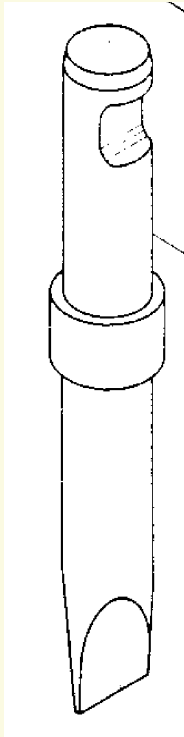
# 1085C Hammer

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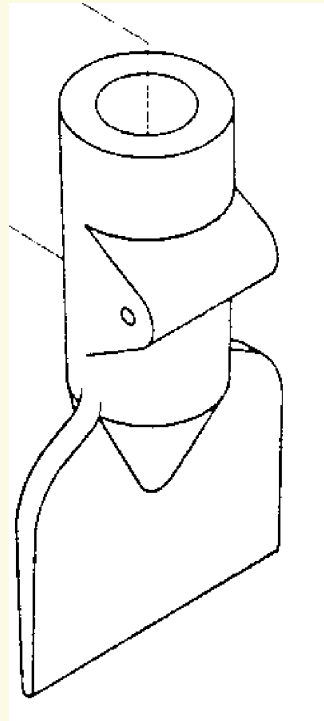
- Hammer must be lubed (GAA) during operations
- Penetration depth for the mollpoint is 6" to 10"
- 18" max



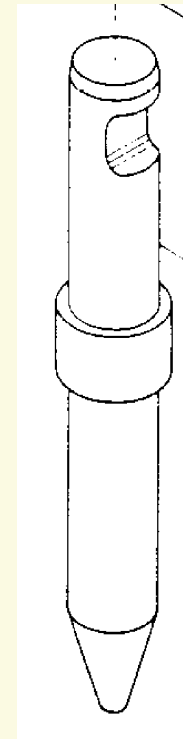
# 1085C



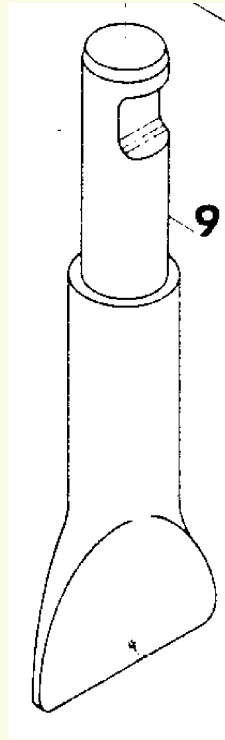
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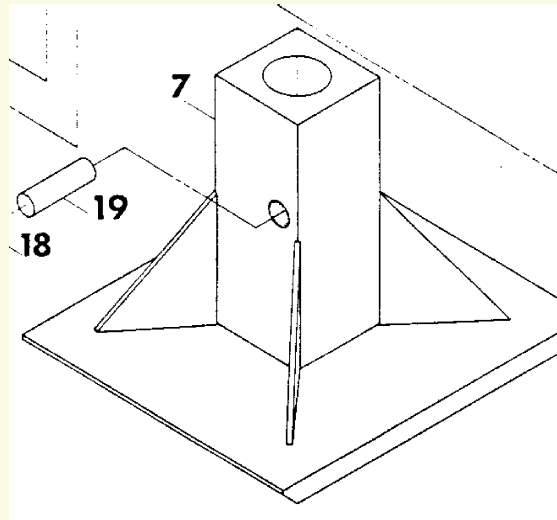
**Line cutter Moil  
point**



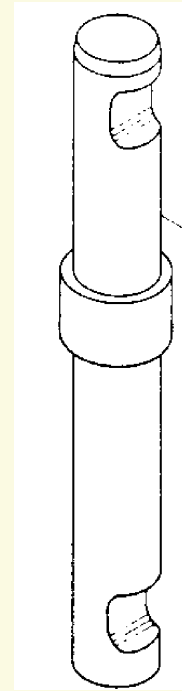
# 1085C



**Spade**



**Tamping  
pad**



**Attachment  
point**



# 1085C Hammer

- **Maintain 60-90 PSI in the hammer during operations.**
- **Minimum air pressure for thin material.**
- **Maximum is for hard material.**
- **The air controls the strike.**
- **Check air periodically.**



# Questions?

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